

Society of Mechanical Engineers, United Engineering Center, 345 East 47th Street, New York, New York 10017.

#### § 229.53 Brake gauges.

All gauges used by the engineer for braking the train or locomotive shall be located so that they may be conveniently read from the engineer's usual position in the cab. An air gauge may not be more than three pounds per square inch in error.

#### § 229.55 Piston travel.

(a) Brake cylinder piston travel shall be sufficient to provide brake shoe clearance when the brakes are released.

(b) When the brakes are applied on a standing locomotive, the brake cylinder piston travel may not exceed 1½ inches less than the total possible piston travel. The total possible piston travel for each locomotive shall be entered on Form FRA F 6180-49A.

(c) The minimum brake cylinder pressure shall be 30 pounds per square inch.

#### § 229.57 Foundation brake gear.

A lever, rod, brake beam, hanger, or pin may not be worn through more than 30 percent of its cross-sectional area, cracked, broken, or missing. All pins shall be secured in place with cotters, split keys, or nuts. Brake shoes shall be fastened with a brake shoe key and aligned in relation to the wheel to prevent localized thermal

stress in the edge of the rim or the flange.

#### § 229.59 Leakage.

(a) Leakage from the main air reservoir and related piping may not exceed an average of 3 pounds per square inch per minute for 3 minutes after the pressure has been reduced to 60 percent of the maximum pressure.

(b) Brake pipe leakage may not exceed 5 pounds per square inch per minute.

(c) With a full service application at maximum brake pipe pressure and with communication to the brake cylinders closed, the brakes shall remain applied at least 5 minutes.

(d) Leakage from control air reservoir, related piping, and pneumatically operated controls may not exceed an average of 3 pounds per square inch per minute for 3 minutes.

#### DRAFT SYSTEM

#### § 229.61 Draft system.

(a) A coupler may not have any of the following conditions:

(1) A distance between the guard arm and the knuckle nose of more than 5⅛ inches on standard type couplers (MCB contour 1904) or more than 5⅝ inches on D&E couplers.

(2) A crack or break in the side wall or pin bearing bosses outside of the shaded areas shown in Figure 1 or in the pulling face of the knuckle.

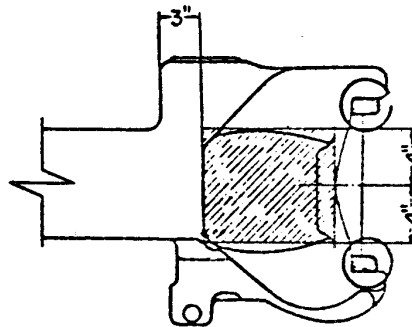


Figure 1